

CHAPTER FOUR

ENVIRONMENTAL CONSEQUENCES OF THE PROPOSAL AND ALTERNATIVES

Chapter Overview

The environmental consequences chapter describes and analyzes potential environmental impacts associated with three alternatives and a No Action alternative. The chapter describes the methodology used to analyze impacts and potential environmental consequences of each alternative. A preferred alternative and an environmentally preferred alternative are identified based on the analysis.

Methodology

In this analysis, the term “factor” describes a potential environmental consequence used to compare the alternatives. Factors represent areas of environmental concern expressed by NPS technical advisors, federal and state agencies, local governments, park staff, community organizations, and individual citizens. High and low assessment criteria were established for each factor. High criteria describe very favorable or desirable environmental conditions. Minimum criterion generally reflect the minimum standards permitted by Federal Law or NPS policy.

Minimum criteria were used to screen for components of alternatives incompatible with law and policy or which caused impairment to park resources. Components of alternatives that did not meet minimum standards were removed from consideration. A discussion of components considered but rejected appears in Chapter II.

Once adjusted to satisfy minimum criteria, alternatives were assessed for their ability to satisfy the high criteria of each factor and potential cumulative impacts. Cumulative impacts are environmental impacts that result from incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time. Environmental consequences common to the action alternatives (discussed in Chapter II) were assessed in

association with the action alternatives to allow a direct comparison to the No Action alternative.

The following scale was used to assess each factor:

- **Exceptional** – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.
- **Moderate** – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.
- **Minor** – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.
- **Negligible** – results of implementing the alternative are notably less than the preferred condition but still exceed minimum criteria for the factor and do not cause resource impairment. An assessment of negligible generally indicates some visitors may perceive an environmental condition associated with implementation of the alternative as a distraction, inconvenience, or unfulfilled desire.

Selection of a preferred alternative was accomplished using Choosing by Advantages (Suhr 1999) - a decision making process based on calculating and compiling the advantages of different alternatives for a variety of factors. Advantages were determined by calculating the difference between assessments for each factor among the alternatives. Figure 4-a shows the

- Introduction of non-period of significance elements to the historic landscape. High Criteria: Only non-period of significance elements essential for visitor safety and orientation are visible. Minimum Criteria: Any non contributing addition to the historic landscape would comply with Interior's Standards for the Treatment of Historic Properties, DO-28, and all other applicable federal policy guidelines.
- Opportunities for solitude or a contemplative experience. High Criteria: Creating and maintaining locations where visitors can experience solitude is preferred condition. Crowding, exposure to external sounds, and/or viewing non historic landscape elements is assumed to negatively impact opportunities for solitude or contemplation. Minimum Criteria: No minimum criteria established.

Interpretation and Museum Operations

Internal scoping revealed a deep concern by park staff and the public about proposed actions that potentially impact interpretive programs, educational opportunities, and museum operations at the park. Actions proposed in this document are subject to the National Environmental Policy Act; the National Park Service's Director's Order #28 (Cultural Resource Management), Director's Order #2 (Park Planning), Director's Order #24 (NPS Museum Collections Management), and Director's Order #12 (Conservation Planning, Environmental Impact Analysis, and Decision-making) which require the consideration of significant impacts that are likely to be highly controversial and potentially affect important scientific, cultural, or historic resources.

Factors in this assessment category help focus the analysis on environmental consequences that potentially affect opportunities to learn about the life and works of Carl Sandburg.

Factors:

- Provides high quality facilities capable of supporting a variety of interpretation and museum programs. High Criteria: Creating facilities that support both large and small interpretation and museum programs is the most desired condition. Minimum Criteria: A minimum number of facilities is not established.
- Provides opportunities for NPS personnel (staff or trained volunteers) to interact with visitors and interpret the Sandburg story. High Criteria: Multiple opportunities for NPS interpretive and museum operation staff to interact with visitors both in and outside the park is preferred condition. Opportunities would occur in formal and impromptu situations, include individual and group experiences, and be able to support professional and

amateur researchers. Minimum Criteria: No minimum standard.

- Provides opportunities for public access to museum collection and related information. High Criteria: Multiple intellectual access points that provide convenient and appropriate public access to more of the museum collection is preferred. Access points would enhance opportunities to experience museum objects as well as information contained in museum archives. Minimum Criteria: Any proposed implementation strategy would comply with DO-28, NPS Museum Handbook, and all other applicable NPS museum policy guidelines.
- Promotes continued learning and research of Carl Sandburg. High Criteria: Provides convenient and appropriate opportunities for professional and amateur researchers to access park resources. Creates interpretive environments that encourage visitors to read and learn more about Carl Sandburg and his work when their visit has concluded. Minimum Criteria: No minimum standard.
- Provides opportunity to link park themes with local, state, national, and international education programs. High Criteria: Creates multiple opportunities for the park to develop and integrate its programs with public and private organizations that encourage continued learning about Carl Sandburg and his works. Minimum Criteria: no minimum standard.

Natural Resource Management

Actions proposed in this document are subject to the National Environmental Policy Act; the National Park Service's Director's Order #28 (Cultural Resource Management), Director's Order #2 (Park Planning), Director's Order #24 (NPS Museum Collections Management), Director's Order #12 (Conservation Planning, Environmental Impact Analysis, and Decision-making), and Director's Order #77 (Natural Resource Management) which require the consideration of significant impacts likely to affect natural resources in the park.

The reader should note that all lands within the current boundaries of the park are managed as a cultural resource. As such, the physical, chemical, and biological resources located on them are maintained to reflect the attributes most associated with the historic significance of the site. Significant change to the existing natural environment is not anticipated in any alternative. However, the placement of additional visitor service infrastructure would result in some vegetation removal that must be accounted for in the EIS. The following factor focuses the analysis on impacts to the natural environment most affected by removal of vegetation.

ASSESSMENT CATEGORY	FACTORS		ALTERNATIVES							
			No Action (Existing Conditions)		Connemara Lifestyle		Paths of Discovery		Sandburg Center	
				Import. Value		Import. Value		Import. Value		Import. Value
Cultural Resource Management	Preservation of historic building interiors	Assess.	Moderate		Moderate		Moderate		<u>Negligible</u>	
		Adv.	Medium advantage	67	Medium advantage	67	Medium advantage	67		
	Introduction of non-contributing elements to the historic landscape	Assess.	Moderate		Minor		<u>Negligible</u>		Minor	
		Adv.	Medium advantage	100	Small advantage	54			Small advantage	54
	Opportunities for solitude or a contemplative experience	Assess.	Moderate		Exceptional		<u>Minor</u>		Minor	
		Adv.	Small advantage	48	Medium advantage	74				
Interpretation and Museum Operations	Provides high quality facilities to support a variety of interpretation and curatorial programs	Assess.	<u>Negligible</u>		Minor		Moderate		Exceptional	
		Adv.			Small advantage	37	Medium advantage	62	Large advantage	82
	Provides visitors with opportunities for personal contact with NPS personnel (staff or trained volunteer)	Assess.	Moderate		Moderate		<u>Moderate</u>		Exceptional	
		Adv.							Small advantage	50
	Provides opportunities for public access to museum collection and related information	Assess.	Minor		<u>Minor</u>		Moderate		Exceptional	
		Adv.					Small advantage	54	Medium advantage	74
	Promotes continued learning and research of Carl Sandburg	Assess.	<u>Minor</u>		Minor		Moderate		Exceptional	
		Adv.					Small advantage	65	Medium advantage	90
	Provides opportunity to link park themes with local, state, national and international education programs	Assess.	Moderate		<u>Moderate</u>		Moderate		Exceptional	
		Adv.							Small advantage	40

Notes:

1. A "no advantage" advantage is represented in the importance value column by a blank cell
2. The lowest assessment for each factor is highlighted in the assessment row by a heavy underline. In instances where more than one alternative scores lowest, only one is highlighted.
3. The alternative with the highest advantage in each factor is highlighted by an oval. In instances where more than one alternative has the highest advantage, only one is highlighted.

Figure 4-b. Factors, Assessments, and Importance Values

ASSESSMENT CATEGORY	FACTORS		ALTERNATIVES								
			Existing Conditions (No Action)		Connemara Lifestyle		Paths of Discovery		Sandburg Center		
				Import. Value		Import. Value		Import. Value		Import. Value	
Nat. Res. Mgt.	Potential to preserve existing vegetation	Assess.	Moderate		Negligible		<u>Negligible</u>		Negligible		
		Adv.	Medium advantage	52							
Park Operations and Administration	Minimizes maintenance responsibility	Assess.	Moderate		Moderate		Minor		<u>Minor</u>		
		Adv.	Small advantage	28	Small advantage	28					
	Provides additional parking spaces	Assess.	<u>Minor</u>		Exceptional		Exceptional		Exceptional		
		Adv.			Medium advantage	70	Medium advantage	70	Medium advantage	70	
	Enhances employee, volunteer, and visitor safety	Assess.	<u>Minor</u>		Minor		Moderate		Moderate		
		Adv.					Small advantage	36	Small advantage	36	
	Enhances energy conservation or reduces energy consumption	Assess.	Moderate		Moderate		<u>Minor</u>		Minor		
		Adv.	Small advantage	17	Small advantage	17					
	Quality of Life and Socio-economic Environment	Provides additional opportunities for walking	Assess.	Minor		<u>Minor</u>		Exceptional		Moderate	
			Adv.					Medium advantage	44	Small advantage	29
Provides incentives for partnering with local governments, community groups, and individual citizens		Assess.	Moderate		<u>Moderate</u>		Exceptional		Moderate		
		Adv.					Small advantage	46			
Potential economic benefit to local community		Assess.	<u>Minor</u>		Minor		Moderate		Moderate		
		Adv.					Small advantage	15	Small advantage	15	
TOTAL RELATIVE IMPORTANCE VALUE			312		347		459		540		

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Figure 4-b. Factors, Assessments, and Importance Values (continued)

Factor:

- Potential to preserve existing vegetation. High Criteria: No removal of vegetation beyond what is required to protect visitor safety or historic resources is the preferred condition. Minimum Criteria: Any proposed implementation strategy would comply with DO-77 and all other applicable federal policy and Federal and state water quality standards.

Park Operations and Administration

A significant concern was voiced by park staff and visitors about actions that increase the park's maintenance, curatorial, and administrative obligations. Factors in this assessment category help focus the analysis on environmental consequences that potentially affect park operations and administrative functions.

Factors:

- Minimizes maintenance responsibilities. High Criteria: Environmental conditions are created that are conducive to efficiently maintaining resources and conducting maintenance operations without need to increase staff or purchase specialized equipment is preferred condition. Minimum Criteria: Minimum maintenance standards as specified in NPS Management Policies and other Federal and State regulations.
- Provides additional parking spaces. High Criteria: A recent transportation study (National Park Service 2000) conservatively estimated an additional 27 to 45 spaces were needed to accommodate visitors during peak visitation periods. For the No action and Connemara Lifestyle alternatives, the preferred minimum number of additional parking spaces is 45. For Sandburg Center and Paths of Discovery alternatives, the preferred minimum number of additional spaces is 45 plus additional parking to allow safe and convenient access to the visitor center. Minimum Criteria: Because no minimum standard is established by law or policy, alternatives that provide fewer than the 27 additional parking spaces recommended by the transportation study will be considered as satisfying the minimum standard for this factor.
- Enhances employee, volunteer, and visitor health and safety. High Criteria: Minimizing risk and maintaining environmental conditions that are healthy and safe is preferred condition. Minimum Criteria: Alternatives will satisfy all applicable NPS health and safety standards.
- Enhances energy conservation or reduces energy consumption. High Criteria: All facilities and operations incorporate sustainable design elements and practices to ensure that water and energy efficiency, pollution prevention, and waste prevention and reduction are

standard practice. Minimum Criteria: new facilities and operations incorporate sustainable design elements and practices to ensure that water and energy efficiency, pollution prevention, and waste prevention and reduction are standard practice. Existing facilities and operations are modified as practicable.

Quality of Life and Socioeconomic Environment

The National Park Service's Director's Order #28 (Cultural Resource Management), Director's Order #2 (Park Planning), and Director's Order #12 (Conservation Planning, Environmental Impact Analysis, and Decision-making) require the consideration of socioeconomic impacts in local and regional communities that could result from implementation of an alternative. Factors in this category help identify and assess significant socioeconomic impacts of the alternatives on quality of life in the surrounding communities.

Factors:

- Provides additional opportunities for walking. High Criteria: Creating additional opportunities for walking is preferred condition. Minimum Criteria: Trails are provided in a manner that does not compromise the integrity of cultural and natural resources in the park. Any additional provisions for walking would comply with Interior's Standards for the Treatment of Historic Properties, DO-28, and all other applicable federal policy guidelines.
- Provides incentives for partnering with local governments, community groups, and individual citizens. High Criteria: Opportunities are created that require interaction with local governments, community groups, and individual citizens to provide services and facilities to satisfy common needs and desires. Minimum Criteria: No minimum standard.
- Potential economic benefit to community. High Criteria: The park contributes substantially to the local and regional economy by encouraging tourism, purchasing goods and services, and providing jobs. Increasing the length of time visitors remain in park is an important consideration. Minimum Criteria: No minimum standard.

Assessment of Potential Environmental Consequences Associated With the No Action Alternative

Cultural Resource Management

Factors in this category describe environmental consequences to cultural resources that could result from a continuation of

current management practices (implementation of the No Action alternative).

Factor: Preservation of Historic Building Interiors

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park management would rehabilitate additional historic building interiors only for the most critical needs. This alternative assumes no additional maintenance, administrative, or visitor service support facilities would be constructed at the park and that an increase in visitation, operational responsibilities, and demand for improved visitor services over time would pressure park managers to rehabilitate up to two historic structure interiors to address these needs. The rehabilitation of any historic structure would not occur prior to a detailed review of the proposed action by the NPS using the most appropriate level of planning and NEPA compliance documentation.

Cumulative Impacts: No significant negative cumulative impacts to resources outside park boundaries have been identified. Within park boundaries, several historic structures are already used for administrative or maintenance functions and closed to public access. Given the understanding that rehabilitation can potentially alter historic interiors permanently, the cumulative impact of successive rehabilitations to historic structures over time could limit future management options to preserve or restore those resources.

Factor: Introduction of non-period elements to the historic landscape

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Additional alteration to the historic landscape would not occur. The following non-historic elements exist in the historic landscape at this time and would remain:

- A shuttle vehicle would continue to transport visitors with disabilities up the steep slope from the parking area to the main house area.
- The trailer comfort station near the main house would remain in service at the same location.
- The parking and public entrance on Little River Road, visitor information and comfort station, concrete walks, and a non-historic natural surface walking trail around

Front Lake would remain in service. Four picnic tables located between the visitor information station and Little River Road would be maintained.

- The maintenance facility, museum preservation facility, and headquarters building would not be improved or enlarged and remain in their existing locations.
- Volunteers would continue to park in the volunteers - parking area.
- The amphitheater would continue in operation at the existing location. The facility would be maintained but not improved.
- Existing trail side amenities would remain in place. Additional trail side benches and trash cans would not be installed.
- Existing outdoor interpretive waysides would remain in place. Additional outdoor waysides would not be installed.

While non-historic elements are evident to the discriminating eye, such additions do not reduce most visitors' ability to comprehend and enjoy the historic ambiance of the site. The majority of visitors find it easy to extrapolate from the landscape they see to the historic landscape as it existed during the Sandburg residency.

Cumulative impacts: The character of the landscape surrounding the park is gradually becoming more suburban in nature. Some suburban infrastructure such as homes and communication towers is visible from the park. While local subdivision regulations provide park managers an opportunity to consult on proposed developments, suburban growth pressures would likely result in modern development visible from the park. No cumulative impacts inside the park are anticipated beyond what is already present.

Factor: Opportunities for solitude or a contemplative experience

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Opportunities for solitude or a contemplative experience are common along the wooded trails, at Big Glassy overlook, and in the pasture areas year around except during the highest of peak visitation days. Such experiences occur in the main house and barn areas of the park during periods of low visitation.

As the number of visitors and variety of uses increases, opportunities for solitude and contemplative experiences would decrease slightly over time.

Cumulative impacts: As the character of the surrounding community becomes more suburban, fewer opportunities for solitude and contemplative experiences would exist outside park boundaries and community residents may become more dependent on Carl Sandburg Home NHS as a recreation resource. The local greenway proposal may reduce this impact to a certain degree if it is funded and constructed in its entirety.

Interpretation and Museum Operations

Factors in this category describe environmental consequences related to interpretation and museum operations that could result from a continuation of current management practices (implementation of the No Action alternative).

Factor: Provides high quality facilities capable of supporting a variety of interpretation/education/museum programs.

Assessment: Negligible – results of implementing the alternative are notably less than the preferred condition but still exceed minimum criteria for the factor and do not cause resource impairment. An assessment of negligible generally indicates some visitors may perceive an environmental condition associated with implementation of the alternative as a distraction, inconvenience, or unfulfilled desire.

Interpretation: The amphitheater, main house, and barn area continue to serve as the principle venues for tour and performance-type interpretive experiences. Opportunities for growth of dynamic and interactive interpretive programs are limited by size and location conflicts.

The house garage is the only facility capable of accommodating an indoor lecture style interpretive program. Because indoor program space is limited, scheduling conflicts occur during periods of inclement weather. Informal learning experiences continue to occur at the horse barn and amphitheater, weather permitting. Outdoor educational experiences are available. Opportunities for additional dynamic and interactive education programs are significantly limited in this alternative.

Museum: Original historic materials associated with the Sandburgs can be viewed at the main house (household and professional objects), woodshed (farm equipment), barn garage (farm vehicles), and shaving shed (farm equipment). Some historic objects continue to degrade because of changes in humidity, temperature, and light at these locations. Access to some historic objects and archives remains inconvenient to the general public because of the limited number of protected environments necessary to increase research or interpretation services.

Cumulative impacts: Interpretation: No significant negative cumulative impacts on interpretation are associated with this factor.

Museum: Historic objects can tolerate a finite exposure to heat, humidity, and light before they must be returned to the museum preservation facility for permanent storage or major conservation treatment. Some historic objects in this alternative would be exhibited in an uncontrolled climatic environment. Objects that have reached their maximum exposure levels would be removed from exhibit status to avoid permanent resource damage. Removal of original objects may need to be reduced by replacement with reproduction or period objects.

Factor: Provides visitors with opportunities for personal contact with NPS personnel (staff or trained volunteers).

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The park continues to provide high quality on-site personal interpretation to visitors at the main house and barn area locations on a regular basis. School-based education program is provided for students in local schools.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Provides opportunities for public access to museum collection and related information.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Visitors may view historic objects at the main house, barn garage, woodshed, milk house, and shaving shed. Many of Carl Sandburg's furnishings and library are exhibited at the main house and can be viewed by participating in the guided house tour. A significant number of Carl Sandburg's personal possessions and almost all historic archives are stored in the museum preservation center. Access to the museum preservation center is available by appointment.

The number of public intellectual access points for information contained in the museum collection is very low (Van Beck, 2000). This alternative assumes that while museum objects and archives would continue to be well maintained,

the number of intellectual access points would not increase significantly.

Cumulative impacts: Accumulated exposures to humidity, light, and heat would necessitate the removal of some objects and manuscripts to the museum preservation facility for permanent storage. While the removal of single objects is not necessarily significant, the total number of objects removed over time would result in a significant reduction in public access to information in the museum collection. No significant negative cumulative impacts to resources outside park boundaries have been identified for this factor.

Factor: Promotes continued learning and research of Carl Sandburg.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Opportunity to expand continued learning and research activities is limited by lack of adequate support facilities and staff. Outside research is supported to the extent possible by the existing curatorial and interpretation staff but accommodating large groups or individuals for extended periods of time is not possible.

Cumulative impacts: Many people interested in Carl Sandburg today lived during the time when he was actively writing and lecturing. As time goes by, people are becoming less familiar with the author's works. Unless younger people can be exposed to Carl Sandburg's works, interest in continued learning and research about Carl Sandburg is expected to decline over time. Manifestations of this trend have already caused a number of Sandburg books to go out of print.

No significant negative cumulative impacts to resources outside park boundaries have been identified for this factor.

Factor: Provides opportunity to link park themes with local, state, national, and international education programs.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park interpretive programs are conducted primarily on site and successfully integrated into local education programs directly by park staff with assistance by area educators. Teacher

workshops are conducted on-site and focus on park resources. Curriculum materials are developed by park staff and local educators. The full potential for state, national, and international education programs is not fully realized.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Natural Resource Management

The following factor describes the potential environmental consequences to natural resources that could result from a continuation of existing conditions (implementation of the No Action alternative).

Factors: Potential to preserve existing vegetation

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The natural environment of the park remains predominantly unchanged from existing conditions. Since new construction activity is the primary cause of vegetation removal and ground disturbance and no additional infrastructure is recommended in this alternative, significant impact to natural resources is not expected. Minor vegetation removal associated with normal maintenance activities would occur. Impacts resulting from increased visitor and recreation use would be reduced on site using normal maintenance techniques and procedures.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Park Operations and Administration

Factors in this category describe potential environmental consequences to park administration and operations resulting from a continuation of current management practices (implementation of the No Action alternative). Staffing needs for current conditions are assumed to be represented by the number of STF employees (all of which should be classified as FT) and currently authorized but unfunded ranger and museum technician positions.

Factor: Minimizes maintenance and administrative responsibilities.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Administration and support services personnel continue to provide supervisory management and/or administrative

support for park personnel and activities without increasing staff levels.

More visitors cause work load to increase gradually over time and park staff compensates by limiting its operations to the most essential functions and improving efficiency through new technology.

Maintenance staff continues to fulfill its responsibilities without increasing staff level. Volunteer labor is able to supplement the maintenance operation to a limited degree.

Resources management staff continues to fulfill its responsibilities for NEPA and Section 106 compliance, safety management, law enforcement, natural and cultural resource inventory and monitoring without additional staff.

Curatorial staffing levels would remain insufficient given the continued deterioration of museum objects and the demands of meeting NPS standards for preservation, record keeping, and access for a large museum collection.

The park interpretive staff continues to provide quality visitor interpretation and education services to people at existing levels on site and in the local community. Staffing levels do not increase and volunteers provide a critical contribution to the interpretive and educational program efforts of the park.

Given increasing numbers of visitors, the vulnerability of resources to theft and vandalism, mounting traffic congestion, and changes in the nature of the surrounding community, the part-time law enforcement presence would not be sufficient to properly protect park resources and enforce park regulations.

Cumulative impacts:

No significant negative cumulative impacts are associated with this factor.

Factor: Provides additional parking spaces.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

A parking deficit still exists. Eight additional spaces are gained in the visitor parking area by reducing the size of existing spaces and restriping, but this increase is not expected to compensate for the greater number of visitors. Visitors are not authorized to park at the park headquarters or maintenance facility or in the volunteers parking area without special permission from the Superintendent due to the limitations of access along a historic one lane road.

Cumulative impacts: As the number of parking spaces in this alternative is finite and the number of visitors anticipated to grow over time, parking problems at the park would contribute to a growing community-wide parking shortage.

Factor: Enhances employee, volunteer, and visitor health and safety.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

The overall park environment is safe and healthy for employees, volunteers, and visitors. A continuation of existing conditions is not expected to result in the development of unsafe or unhealthy conditions over time.

Parking on the shoulder of Little River Road continues to occur and visibility is partially reduced for drivers and pedestrians trying to cross the street. Increased potential for vehicle and pedestrian accidents during periods of significant traffic congestion exists.

A regular two way flow of pedestrians and vehicles moves between the headquarters and maintenance buildings and the volunteer parking area. Low vehicle speeds, safety training, and observant employees reduce the potential for accidents.

Cumulative impacts: Exposure to health and safety risks for employees, volunteers, and visitors near the visitors parking area and on Little River Road could increase slightly over time as a result of increased vehicle traffic. Risk could be reduced by adding traffic control devices at critical intersections but such measures might negatively impact the historic character of the park and surrounding neighborhood.

Factor: Enhances energy conservation or reduces energy consumption.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Excessive energy consumption does not result from current NPS activity. A continuation of existing conditions is not expected to increase the level of energy consumption significantly over time. No new structures that require the consumption of additional energy would be built.

Vehicles continuously circulating in the visitor's parking area waste energy and cause traffic congestion on Little River Road. Congestion is especially intense when park visitors and

patrons of the Flat Rock Playhouse arrive or depart at the same time.

Public transportation to the park is not assumed to be provided in this alternative.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Quality of Life and Socioeconomic Environment

Factors in this category describe potential environmental consequences to quality of life and socioeconomic values resulting from a continuation of current management practices (implementation of the No Action alternative).

Factor: Provides additional opportunities for walking.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Opportunities to walk for exercise are available but additional walking trails are not constructed. Trail side amenities remain at existing levels and connection to the greenway system occurs at the park entrance.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor. Local greenway system helps reduce some of the impact of not expanding walking opportunities for local residents in the park.

Factor: Provides incentives for partnering with local governments, community groups, and individual citizens.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park management remains engaged, dedicated, and a willing member of the local community. It cooperates constructively on issues of mutual interest and concern and works to strengthen its traditionally close relationship with friends support groups, volunteers, and local government officials.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Potential economic benefit to community.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short

of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

The park contributes to the local economy by attracting tourists, providing permanent and part time employment opportunities, and purchasing goods and services from local suppliers. While the exact amount contributed to the local economy by these actions is unknown, it is logical to assume that positive economic benefit results from increased expenditures by the park. It is assumed that because additional interpretive programs and resources are not included in this alternative, length of stay per visitor would not increase substantially. Overnight stays and expenditures by visitors at local businesses could increase slightly in conjunction with the increase in total visitors over time.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Summary of adverse effects that cannot be avoided

These are impacts that cannot be fully mitigated or avoided. Exposure of historic artifacts and manuscripts to light, heat, and humidity would continue, ultimately resulting in their removal to the museum preservation facility for permanent storage. Such impacts would be more significant in the No Action alternative as fewer climate-controlled environments are in place to slow the deterioration process and provide public access to historic artifacts and manuscripts.

Summary of irreversible or irretrievable commitments of resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long term. Irretrievable commitments are those that are lost for a period of time.

Irreversible commitments: Historic objects can tolerate only a finite amount of exposure to heat, humidity, and light before they must be returned to the museum preservation facility for permanent storage or major conservation treatment. In the No Action alternative, exposure of historic artifacts and manuscripts to light, heat, and humidity would continue (particularly in the main house), ultimately resulting in their removal to the museum preservation facility for permanent storage. Overexposure of historic artifacts and manuscripts to light, heat, and humidity would cause significant deterioration in those resources that cannot be reversed.

Irretrievable commitments: No irretrievable commitments have been identified for this alternative.

Summary of the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity

For the purposes of this discussion, short term is defined as the time span for which this General Management Plan is expected to be effective (generally assumed to be 15-20 years) and long term is defined as a period beyond that time.

In the No Action alternative, the short term benefits of increasing visitor understanding of the Sandburg story by providing public access to historic objects is facilitated by the display of sensitive materials in uncontrolled climatic environments. Because these objects can tolerate only a finite exposure to such conditions and the No Action alternative does not provide additional public access points that protect objects from such exposures, the long term productivity of these sensitive historic resources is assumed to be reduced.

Assessment of Potential Environmental Impacts Associated With the Sandburg Center Alternative.

Cultural Resource Management

Factors in this category describe impacts to cultural resources that could result from implementing the Sandburg Center alternative.

Factor: Preservation of Historic Building Interiors

Assessment: Negligible – results of implementing the alternative are notably less than the preferred condition but still exceed minimum criteria for the factor and do not cause resource impairment. An assessment of negligible generally indicates some visitors may perceive an environmental condition associated with implementation of the alternative as a distraction, inconvenience, or unfulfilled desire.

No historic building interior would be rehabilitated for administrative, storage, or maintenance use. Over time, all administrative and maintenance operations based in historic structures, with the exception of the visitor contact area in the main house basement, would be relocated to the park services or visitor services zones.

The exteriors of historic structures would not be altered by the proposed action and all exterior structure conditions would be preserved or restored to the period of significance over time.

Park management would rehabilitate additional historic building interiors to provide additional space for interpretive programs. The exact location, number, and functions of historic structure interiors rehabilitations would be

determined by a future Development Concept Plan. It is important to note that no rehabilitation of an historic structure interior would occur prior to a detailed documentation of the historic resource by the NPS and a public review of the proposed NPS rehabilitation action using the appropriate level of park planning and NEPA compliance documentation.

Cumulative Impact: No significant negative cumulative impacts to resources outside park boundaries have been identified. Inside the park, the cumulative impact of multiple rehabilitations to historic structure interiors over time could limit future management options to preserve or restore those resources.

Factor: Introduction of non-period elements to the historic landscape

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Non-historic elements would be most evident in the visitor services and park services zones where additional infrastructure is needed to accomplish the enhanced interpretive and educational goals of the alternative. Non-historic elements introduced into the historic interaction zone would be accomplished in such ways as to protect the visitor's ability to comprehend and enjoy the historic ambiance of the site. The majority of visitors would find it relatively easy to extrapolate from the landscape they see to the historic landscape as it existed during the Sandburg residency. Non-historic elements would be minimized in the historic discovery zone.

The following non-historic elements are proposed or present in the historic landscape for this alternative:

- An increased number of visible interpretive waysides would be placed near trails in the visitor services and historic interaction zones. The appropriate number and location for these elements would be determined in a comprehensive interpretive master plan, cultural landscape report, trail management plan, or development concept plan.
- The existing trailer comfort station near the main house would be replaced by a sensitively designed new facility of approximately the same size at the same location. Design alternatives for the new facility would be developed and coordinated with the State Historic Preservation Officer as required by NPS policy.

- The parking and public entrance area on Little River Road would be redesigned and enlarged to accommodate additional vehicles. Design alternatives for these improvements would be proposed in a development concept plan and coordinated with the State Historic Preservation Officer and the public as required by NPS policy.
- Visitor service infrastructure would be enhanced in the visitor services zone by modifying the visitor information and comfort station to provide additional interpretive, educational, and information capabilities. The non-historic walking trails in the visitor services zone would remain and additional trails could be added. A small area for picnic tables could be included in the design if desired. Design alternatives for these improvements would be developed in a development concept plan and coordinated with the State Historic Preservation Officer and the public as required by NPS policy.
- A shuttle vehicle would continue to transport visitors who need assistance up the steep slope from the parking area to the main house area. The visual impacts of the transport vehicle would be reduced by replacing it with a less visually and audibly intrusive vehicle.
- The existing amphitheater would be replaced by a new facility constructed at one of the three approved sites.
- The historic landscape of the park would represent the period of significance as directed in the zone descriptions of this GMP. The landscape of the old amphitheater would be restored to period conditions. Site specific historic landscape management and implementation procedures within specific zones would be recommended and documented in a cultural landscape report or development concept plan.
- Trail side amenities such as benches and trash receptacles would occur in the historic interaction zone. Visible interpretive media, trail side benches, trash cans and other nonessential visitor services infrastructure would be removed from the historic discovery zone.
- The maintenance facility, museum preservation facility, and headquarters building would remain in the same locations. Facilities could be enlarged as needed. All administrative and maintenance use of historic structures in the historic interaction and historic discovery zone would be moved to the park services or visitor services zone over time.
- Volunteers parking area would be enlarged by approximately 1000 SF and redesigned to improve traffic flow and accessibility.

Cumulative impacts: The character of the landscape surrounding the park is gradually becoming more suburban in nature. Proposed improvements to the visitor parking area and construction of an new visitor center and parking area, when combined with other potential commercial and residential developments in the Village of Flat Rock would contribute to the overall trend of suburbanization in the local area. The NPS can reduce impacts associated with new park infrastructure by using sensitive design and construction techniques and protecting 110 undeveloped acres between Big Glassy and Little River road. However, some contribution to the overall trend of higher development densities in the local landscape is likely to occur.

Factor: Opportunities for solitude or a contemplative experience.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Opportunities for solitude or contemplative experiences would be less frequent in this alternative than the No Action alternative and the Connemara Lifestyle alternative. Multiple activities occurring near the main house and barn areas could reduce opportunities for solitude in those areas. Visitors would continue to find solitude or contemplative experiences along the wooded trails, at Big Glassy overlook, and in the pasture areas on most non-peak visitation days. The NPS can reduce impacts on solitude associated with new park programs and infrastructure by protecting the 110 undeveloped acres between Big Glassy and Little River road and providing opportunities for a woodland walking experience there.

Cumulative impacts: As the character of the surrounding community becomes more suburban, fewer opportunities for solitude and contemplative experiences would exist outside park boundaries. The addition of an off-site visitor center would make the local community a more desirable tourism destination and attract additional people to local neighborhoods. Growth pressures may increase on community and park resources as a consequence of rising development and population pressures. Presumably opportunities for solitude and contemplative experiences would be reduced inside and outside the park over time. The NPS can reduce cumulative impacts by protecting the 110 undeveloped acres between Big Glassy and Little River road and providing opportunities for a woodland walking experience there.

Interpretation and Museum Operations

Factors in this category describe impacts related to interpretation, education, and museum operations that could result from implementing the Sandburg Center Alternative.

Factor: Provides high quality facilities capable of supporting a variety of interpretation/education/museum programs.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the conditions described in the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

Interpretation: A new visitor center facility would provide a venue capable of integrating new technologies and techniques with interpretive programs. Large and small group interpretive activities could be accommodated easily. New amphitheater facility provides an additional high quality venue for outdoor interpretive programs. Several multipurpose interpretive venues would be provided in rehabilitated historic structure interiors in the historic interaction zone. An expansion or renovation of the existing visitor information station in the visitor services zone would serve as an interpretive resource. Use of park resources for research is greatly enhanced by providing additional safe and appropriate intellectual access points for scholars, writers, and artists.

Museum: Original historic objects and archives contained in the park's museum collection can be exhibited in a secure and climate controlled environment at the new visitor center and renovated visitor information station. Intellectual access points are increased and museum resources become a more accessible component of the visitor experience. This alternative makes it more feasible to borrow and exhibit Sandburg related objects or archives from other private or public museum collections.

Cumulative impacts:

Interpretation: No significant negative cumulative impacts on interpretation are associated with this factor.

Museum: Historic objects can tolerate only a finite amount of exposure to heat, humidity, and light before they must be returned to the museum preservation facility for permanent storage or major conservation treatment. Objects would reach their maximum exposure levels at a slower rate if they are exhibited in a climate controlled environment.

Factor: Provides visitors with opportunities for personal contact with NPS personnel (staff or trained volunteers).

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An

assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

This alternative creates an environment where opportunities for interaction between visitors and NPS staff would be plentiful by providing additional interpretive venues and increased access to resources for programs and exhibits.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Provides opportunities for public access to museum collection and related information.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

The number of public intellectual access points for information contained in the museum collection is greatly increased by the addition of a new off site visitor education facility, renovated visitor information station, and the creation of a high quality and user friendly resource database. Data base information could be accessed and used by visitors both on and off site using the internet or other high technology media formats.

New visitor center would make it possible to exhibit many of the objects and manuscripts currently in storage at the museum preservation facility. This facility would also make it possible to borrow and interpret Sandburg related resources from other institutions' collections in a safe and protected environment.

Cumulative impacts: Accumulated exposures to humidity, light, and heat would be reduced and extend the time those objects and manuscripts can be exhibited would be substantially increased over the no action and Connemara Lifestyle alternatives.

No significant negative cumulative impacts to resources outside park boundaries have been identified for this factor.

Factor: Promotes continued learning and research of Carl Sandburg.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the conditions described in the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

This alternative considers building interest in continued learning and research to local, regional, and worldwide audiences one of its top priorities. The new visitor center provides public access to high quality venues that can be used for interpretation, education, and research programs. Accommodating large groups or individuals for extended periods of time is possible. Outside research can be supported and is encouraged.

This alternative builds on the assumption that Carl Sandburg's works are as relevant to contemporary American society today as they were when first published and that by providing research, education, and interpretive activities a new generation of Americans would develop an interest in Carl Sandburg. As interest builds over time, demand for Sandburg works may help keep Sandburg works in print.

Cumulative impacts: No significant negative cumulative impacts to resources outside the park have been identified for this factor.

Factor: Provides opportunity to link park themes with local, state, national, and international education programs.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park education programs in this alternative are conducted both on and off site with a strong focus on internet based outreach to a global audience. Park management encourages partnerships with national and global Sandburg scholars and institutions to develop education programs. Teacher workshops are conducted in partnership with universities and museums staffed by Sandburg scholars. Facilities for workshops and other education oriented events are available. Curriculum materials are developed and directed toward a global audience and conducted in partnership with larger national initiatives whenever possible.

Cumulative impacts: No significant negative cumulative impacts to resources outside the park have been identified for this factor.

Natural Resource Management

This factor describes the potential changes to vegetation that could result from implementing the Sandburg Center alternative.

Factor: Potential to preserve existing vegetation

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral

assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Use of trails will increase as more visitors come to the park. While the future physical impact of visitors to vegetation near trails is difficult to quantify, it is logical to assume that impacts will increase in proportion to the rise in people using the trails. Impacts to sensitive vegetation associated with trail system use would be reduced by tightly controlling access to granite domes and increasing maintenance and enforcement activities in heavily affected or sensitive areas.

The construction of new visitor service infrastructure would result in removal of vegetative cover and cause associated ground disturbance. Three significant developments are proposed within the present boundaries of the park in this alternative.

Parking area expansion: It is expected that enlarging the visitor parking area would cause the removal of some tree cover in the vicinity of Front Lake. Grading of the landscape is also expected as the topography of the site is moderately sloping. While actual design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 1.25 to 1.5 acres of mixed pine and hardwood woodland in the visitor services zone.

Approximately 500 to 1000 SF of mixed pine and hardwood forest would be removed to enlarge the volunteer parking area.

The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts that would be gone at the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff to Front Lake, Side Lake, and Memminger Creek would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be additional parking areas and walkways.

Amphitheater relocation: It is expected that relocating the existing amphitheater to one of the three recommended areas would cause the removal of tree cover. Grading of the landscape is expected as the topography is slightly to moderately sloping at each location. While site design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 5000 SF of mixed pine and hardwood woodland or pasture in the historic interaction

zone. The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts and would disappear at the conclusion of the construction phase. Soil runoff to Front Lake, Side Lake, and Memminger Creek would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts of the construction process and would disappear at the conclusion of the activity. Remaining for the long term would be an amphitheater and associated walkways. Impacts resulting from the new amphitheater construction would be reduced by restoring the former site to its historic condition resulting in no net loss of historic landscape due to the action.

Expansion of Administrative and Maintenance Facilities: Enlarging the headquarters and maintenance area would cause the removal of some tree cover near back road in the general area of the existing facility. Some grading would occur as the topography of the site is slightly sloping. While actual design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 1 acre of mixed pine and hardwood woodland in the park services zone.

The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts and would disappear at the conclusion of construction. Soil runoff to adjacent areas would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Remaining for the long term would be additional structures, paved surfaces, and graveled surfaces.

Cumulative impacts: The construction of an off site visitor center may cause the removal of trees at an undetermined location near the park. Because a potential site has not been identified, the number of trees potentially removed cannot be determined. It is assumed that any reduction would contribute to the overall trend of tree loss in the suburban landscape surrounding the park. Sensitive design and construction practices could reduce the impact of potential tree loss resulting from construction of a visitor center on a wooded site.

Impact of tree removal due to actions in this alternative could be reduced by acquiring through purchase or protective easement wooded property adjacent to the park. Preserving

these properties in their existing condition would protect more of the suburban landscape from tree removal and contribute to overall scenic view and boundary protection at the park.

Park Operations and Administration

Factors in this category describe impacts to park operations and administration that could result from implementing the Sandburg Center Alternative.

Factor: Minimizes maintenance and administrative responsibilities.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

The addition of new staff and facilities would increase administration and support services responsibilities. It is anticipated that one additional full time administrative assistant position would be needed to address the additional responsibilities.

The addition of new on-site and off-site facilities would increase maintenance work load. It is anticipated that one additional full time maintenance positions would be needed to address the additional responsibilities. Volunteer labor could help supplement maintenance personnel to a small degree.

Resources management responsibilities increase with the addition of new facilities, more visitors, and need to coordinate the NEPA and Section 106 compliance procedures associated with those proposed developments. It is anticipated that two additional staff member will be required to fulfill the increased monitoring and compliance responsibilities. Volunteers would play an essential role by helping to measure and document natural and cultural resource conditions on an ongoing basis.

Additional museum and curatorial staff would be needed to provide support for interpretive and education programs and coordinate collection preservation and conservation treatments resulting from increased access to objects and manuscripts. It is anticipated that two additional full time positions would be required to address this need. Volunteer labor would continue to play a critical role in fulfilling the preservation responsibilities of the park.

Responsibility of the interpretive staff is significantly increased in this alternative because of its focus on creating dynamic and interactive visitor interpretation and education programs. It is anticipated that two additional full time positions would need

to be added over time to address the increased work load and staff new facilities. Volunteers would continue to make a very significant contribution to the interpretive and educational program efforts of the park.

More visitors, facilities, and land would require the addition of a full-time law enforcement ranger to properly enforce park regulations.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Provides additional parking spaces.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

Up to 20 extra parking spaces are provided at new visitor center in addition to those required for operation the facility. This additional parking capacity will be located within convenient walking distance of the park and be connected to the park entrance via a pedestrian pathway. Up to 20 additional parking spaces are created by restriping and expanding the visitor parking area in the Visitor Services Zone. Up to 10 additional spaces are created in the volunteer parking area on the back drive.

Cumulative impacts: Increased parking availability in this alternative may help reduce traffic congestion near the Park and Playhouse as some traffic volume would presumably be diverted to the off site location. Depending on the location of the new facility, potential exists for a joint parking arrangement with the Flat Rock Playhouse, or the Village of Flat Rock that could help resolve the community wide parking shortage.

Factor: Enhances employee, volunteer, and visitor health and safety.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the conditions described in the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

The overall park environment is safe and healthy for employees, volunteers, and visitors. The implementation of this alternative is not expected to result in the development of unsafe or unhealthy conditions over time.

Vehicle and pedestrian interaction in the visitor services zone would be enhanced by improved circulation patterns associated with the parking area expansion.

A regular two way flow of pedestrians and vehicles moves simultaneously between the headquarters and maintenance buildings and the volunteer parking area for most of the day. Low vehicle speeds, safety training, and observant employees reduce the potential for accidents.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Enhances energy conservation or reduces energy consumption.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Additional on site and off site facilities and program activities would cause energy consumption to increase. Energy use may be reduced to a certain degree by using energy saving technologies when designing and constructing the off site visitor center .

Potential energy conservation may result from improvements to parking and circulation in the visitor services zone that reduce traffic congestion at the park entrance. Improvements in the transportation system may include some form of public transportation service possible provided through cooperation with local governments, private businesses, or support groups.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Quality of Life and the Socioeconomic Environment

Factors in this category describe impacts to quality of life and socioeconomic environments that could result from implementing the Sandburg Center alternative.

Factor: Provides additional opportunities for walking.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The construction of additional walking trails would occur in the visitor services zone. Additional trail side amenities are provided in the visitor service zone. A pedestrian connection is provided between the off site visitor center and the park entrance. Connection to the greenway system occurs at the park entrance.

The NPS would create opportunities for a woodland walking experience on the 110 undeveloped acres between Big Glassy and Little River road should the property be purchased.

Cumulative impacts: Additional walking trails in the visitor services zone, on land acquired in a boundary expansion, and in conjunction with local community efforts to expand the greenway system help provide more walking opportunities for both local residents and park visitors.

Factor: Provides incentives for partnering with local governments, community groups, and individual citizens.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park management remains engaged, dedicated, and a willing member of the local community. It cooperates constructively on issues of mutual interest and concern and works to strengthen its traditionally close relationship with friends support groups, volunteers, and local government officials. Park management recognizes the high potential for beneficial partnering relationships but does not rely solely on those relationships to accomplish management objectives.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factors: Potential economic benefit to community.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

A Sandburg visitor center would attract visitors from a worldwide audience. Visitors who come to the area to take advantage of new opportunities at the park are potential visitors to other regional tourism locations. It is assumed that length of stay per visitor would increase as the number of programs and educational opportunities at the park and visitor center grows. Centrally located visitor center, parking, and pedestrian walkways could encourage visitors to extend their stay in the local area to take advantage of multiple park and private sector tourism and entertainment opportunities. Overnight stays in the local area could increase in conjunction with the increase in total visitors and length of stay. Additional goods and services would be purchased from local businesses to support increased program, maintenance, and administrative activities at the park.

Construction activity associated with the alternative would provide a temporary boost to the local and regional economy.

Approximately 9 permanent and part time employment opportunities could be created over time.

Potentially removes up to 115 acres from Henderson County property tax roles over time. Impact of lost property tax revenue to Henderson County may be reduced through the Federal Payment in Lieu of Taxes (PILOT) program which would reimburse the county for lost property tax revenue for a period of five years, through sales tax revenues generated by the purchase of additional goods and services from local businesses by visitors, and park purchases of construction and design services for new park infrastructure.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Summary of adverse effects that cannot be avoided

These are impacts that cannot be fully mitigated or avoided. Implementing the Sandburg Center alternative would cause some tree removal and ground disturbance associated with the addition of visitor service infrastructure in the visitor services zone and at an undetermined off site location. While sensitive design and construction practices and the protection of undeveloped lands resulting from a boundary expansion would reduce many of these adverse impacts, some contribution to the overall trend of higher development densities in the surrounding community is expected.

Sensitive design and construction practices can also reduce the visual impact of the new visitor service infrastructure near Front Lake, however, complete screening of these elements is not possible and some non-historic elements would be visible from the front porch of the main house, particularly in the winter when deciduous trees have lost their foliage.

Summary of irreversible or irretrievable commitments of resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long term. Irretrievable commitments are those that are lost for a period of time.

Irreversible commitments: Historic objects can tolerate only a finite exposure to heat, humidity, and light before they must be returned to the museum preservation facility for permanent storage or major conservation treatment. In the Sandburg Center alternative, exposure of historic artifacts and manuscripts to light, heat, and humidity would continue (particularly in the main house), ultimately resulting in their removal to the museum preservation facility for permanent storage. This alternative significantly reduces exposures by providing several locations where sensitive resources can be accessed by visitors and researchers in a climate controlled environment.

Irretrievable commitments: New construction in the visitor services zone will result in additional walkways, paved parking areas, and other permanent visitor service infrastructure. These impacts are considered irreversible in the sense that other potential use of these resources would be lost for a significant period of time. The loss is, however, somewhat reduced by the fact that the majority of the area that could be developed is a reclaimed road bed that the Sandburgs received in the late 1950's through a land trade when the road alignment of Little River Road was changed.

Relocating the amphitheater will result in vegetation removal, additional walkways, seating and stage construction, and other permanent visitor service infrastructure. These impacts are considered irreversible in the sense that other potential uses of these resources (including historic preservation) would be lost for a significant period of time. The loss would be reduced by restoring the old amphitheater site near the main house to period of significance condition.

Summary of the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity

For the purposes of this discussion, short term is defined as the time span for which this General Management Plan is expected to be effective (generally assumed to be 15-20 years) and long term is defined as a period beyond that time.

In the Sandburg Center alternative, the short term benefits of providing improved visitor services, improved program capability, and greater public access to information in the museum collection are facilitated by development of a small area and the rehabilitation of one or more historic building interiors.

Assessment of Potential Environmental Impacts Associated with the Paths of Discovery Alternative.

Cultural Resource Management

Factors in this category describe impacts to cultural resources that could occur as a result of implementing the Paths of Discovery Alternative.

Factor: Preservation of Historic Building Interiors

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy

the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park management would preserve and restore as many historic building interiors to the period of significance as practical. Preserved or restored historic building interiors would be incorporated into the interpretive program of the park. Historic structures would not remain vacant or unused. Additional historic building interiors would not be rehabilitated for administrative, storage, or maintenance use. Over time, most administrative and maintenance operations currently in historic structures would be relocated to the park services zone, visitor services zone, or a new off site visitor center. The visitor contact area would remain in the main house basement and use of the Farm Manger's Residence would continue as a ranger residence.

Exteriors of all historic structures would be preserved or restored to the period of significance over time.

Cumulative Impact: No significant negative cumulative impacts have been identified for this alternative.

Factor: Introduction of non-period elements to the historic landscape

Assessment: Negligible – results of implementing the alternative are notably less than the preferred condition but still exceed minimum criteria for the factor and do not cause resource impairment. An assessment of negligible generally indicates some visitors may perceive an environmental condition associated with implementation of the alternative as a distraction, inconvenience, or unfulfilled desire.

Non-historic elements would be evident in an expanded visitor services zone. Opportunities for visitors to learn about the Sandburg story would be placed at appropriate locations along pedestrian pathways. Interpretive waysides and other non-historic elements would be minimized in the historic discovery zone.

The following non-historic elements are proposed or present in the historic landscape for this alternative:

- A non-historic walking trail extending from the visitor parking area to the back gate would be constructed between the historic fence line and shoulder of Little River Road. The trail would be most visible from Little River Road and the barn area.
- A non-historic walking trail would be constructed parallel to back drive connecting the new trail on Little River Road to the barn area. While the trail would be mostly screened from historic views of the pastures and barn area, its implementation would likely require the construction of several small footbridges or boardwalks.

- Waysides or other interpretive devices would be visible near trails in the visitor services and historic interaction zones at a higher frequency than the other alternatives. The exact number and location for these elements would be determined in a comprehensive interpretive master plan, cultural landscape report, trail management plan, or development concept plan. The visual impact of waysides could be reduced to some extent by the use of new audio technologies and designs that minimize the visual impact of wayside exhibits.
- The existing trailer comfort station near the main house would be replaced by a sensitively designed new facility of approximately the same size at the same location. Design alternatives for the new facility would be developed and coordinated with the State Historic Preservation Officer as required by NPS policy.
- The parking and public entrance area on Little River Road would be redesigned and enlarged to accommodate additional vehicles. Design alternatives for these improvements would be proposed in a development concept plan and coordinated with the State Historic Preservation Officer and the public as required by NPS policy.
- Visitor service infrastructure would be enhanced in the visitor services zone by modifying the visitor information and comfort station to provide additional interpretive and information capabilities. The non-historic walking trails in the visitor services zone would remain and additional trails would be added. A small area for picnic tables could be included in the design if desired. Design alternatives for these improvements would be developed in a development concept plan and coordinated with the State Historic Preservation Officer and the public as required by NPS policy.
- A shuttle vehicle would continue to transport visitors who need assistance up the steep slope from the parking area to the main house area. The visual impacts of the transport vehicle would be reduced by replacing it with a less visually and audibly intrusive vehicle.
- The existing amphitheater would be replaced by a new facility constructed at one of the three approved sites identified in the alternative. The landscape of the old amphitheater would be restored to period conditions.
- The historic landscape of the park would be maintained to represent the period of significance as directed in the zone descriptions of this GMP. Historic landscape management treatments and implementation procedures within specific zones would be recommend and

documented in a cultural landscape report or development concept plan.

- Trail side amenities such as benches and trash receptacles in the historic interaction zone would be evident but not in such quantity as to compromise the historic ambiance of the site. Visible interpretive media, trail side benches, trash cans and other nonessential visitor services infrastructure would be removed from the historic discovery zone.
- The maintenance facility, museum preservation center, and headquarters building would be enlarged as needed within the park services zone. All administrative and maintenance use of historic structures in the historic interaction and historic discovery zone would be moved to the park services or visitor services zone over time with the exception of the visitor contact station in the main house and the ranger residence in the farm manager's residence.
- Volunteers parking area would be expanded by approximately 1000 SF and redesigned to improve traffic flow and accessibility.

Cumulative impacts: The proposed construction of a walking trail along Little River Road, off site visitor center and parking area could combine with other local developments to further suburbanize the local area. The NPS can reduce impacts associated with the proposed changes by incorporating sensitive design and construction techniques but some contribution towards the overall trend of suburbanization will occur. Cumulative impacts to the local landscape could be reduced by acquiring and protecting additional undeveloped acreage around the park for view and boundary protection.

Factor: Opportunities for solitude or a contemplative experience.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Creating convenient access to an improved pedestrian trail system would likely increase the number of people who come to the park for a walking experience. During periods of moderate to high visitation, the addition of trail amenities may encourage more use of the woodland trail system and limit opportunities for solitude on the major woodland trails and at Big Glassy summit as well.

The potential for historic views to include people, trails, and interpretive material is increased. These types of non-historic elements would be most visible looking towards the barn area from Little River Road and looking over the pastures from the barn area.

Cumulative impacts: As population increases and the character of the surrounding community becomes more suburban, fewer opportunities for solitude and contemplative experiences may exist outside park boundaries. A reduction in opportunity for solitude and contemplation at the park would contribute to this trend. The NPS can reduce cumulative impacts on solitude by protecting the 110 undeveloped acres between Big Glassy and Little River road and providing opportunities for a woodland walking experience there.

Interpretation and Museum Operations

Factors in this category describe impacts related to interpretation, education, and museum operations that could occur as a result of implementing the Paths of Discovery alternative.

Factor: Provides high quality facilities capable of supporting a variety of interpretation/education/museum programs.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Facilities for interpretation, education, and museum programs could be provided through partnering opportunities with local and regional organizations or at an off site visitor center. An expansion or renovation of the existing visitor information station in the visitor services zone provides some additional opportunity on site. New on site amphitheater facility provides high quality venue for outdoor interpretive programs. On site educational opportunities are lower than Sandburg Center Alternative because of fewer on site venues in historic structures.

Access to park resources for research is improved by providing an additional safe and appropriate intellectual access point for scholars, writers, and artists at the off site visitor center.

This alternative makes it more feasible to borrow and exhibit Sandburg related objects or archives from other collections at the park.

Cumulative impacts:

Interpretation: No significant negative cumulative impacts on interpretation are associated with this factor.

Education: No significant negative cumulative impacts on education are associated with this factor.

Museum: Historic objects can tolerate only a finite amount of exposure to heat, humidity, and light before they must be brought back to the museum preservation facility for permanent storage or major conservation treatment. Objects would reach their maximum exposure levels at a slower rate if they are exhibited in the climate controlled environments provided at the proposed new facilities.

Factor: Provides visitors with opportunities for personal contact with NPS personnel (staff or trained volunteers).

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The self-discovery theme of this concept encourages people to interact with park resources on their own terms as they walk through the park. Visitors are exposed to the Sandburg story in ways that encourage them to seek out NPS personnel for additional information if they desire. High quality personal interpretation exists on site at the house and barn areas and off site at the visitor center. Additional contact points are provided at the visitor information station in the visitor services zone and at the bookstore in the basement of the main house.

School based education programs continue to provide personal contact opportunities on a local and regional scale.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Provides opportunities for public access to museum collection and related information.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The number of public intellectual access points for information contained in the museum collection is greatly increased by the addition of a new off site visitor center, renovated visitor information station, and the creation of a high quality and user friendly resource database. Data base information could be accessed and used by visitors both on and off site using the internet or other high tech media formats. Although the number of on-site access points and interpretive program activity is lower than the Sandburg Center alternative, the Paths of Discovery alternative provides better access to information than existing conditions or the Connemara Lifestyle alternative

New visitor center would make it possible to exhibit many of the objects and manuscripts currently in storage at the museum preservation facility. This facility would also make it possible to borrow and interpret Sandburg related resources from other institutions' collections in a safe and protected environment.

Cumulative impacts: Accumulated exposures to humidity, light, and heat would be reduced and the time those objects and manuscripts can be exhibited would be substantially increased over the No Action alternative.

No significant negative cumulative impacts to resources outside park boundaries have been identified for this factor.

Criteria: More opportunity is preferred. More intellectual access points are preferred. Minimum standard: Any proposed implementation strategy would comply with DO-28, NPS Museum Handbook, and all other applicable NPS museum policy guidelines.

Factor: Promotes continued learning and research of Carl Sandburg.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The new visitor center provides additional opportunity for interpretation, education, and research programs. Accommodating large groups or individuals is possible. Outside research can be supported and is encouraged.

Visitors who use the park primarily for a walking experience are encouraged to learn more about Sandburg through exposure to interpretive waysides and other trail side interpretive elements.

Cumulative impacts: No significant negative cumulative impacts to resources outside the park have been identified for this factor.

Factor: Provides opportunity to link park themes with local, state, national, and international education programs.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park education programs in this alternative are conducted both on site and as an outreach program in local schools. Teacher workshops are conducted both on and off site and focus on developing a relationship between park and local/regional education resources. Curriculum materials are

developed in strong partnership with area and regional educators. Teachers prepare materials for use by other teachers with direction and assistance provided by park staff.

Cumulative impacts: No significant negative cumulative impacts to resources outside the park have been identified for this factor.

Natural Resource Management

The following factor describes the potential changes to vegetation that could result from implementing the Paths of Discovery alternative.

Factor: Potential to preserve existing vegetation

Assessment: Negligible – results of implementing the alternative are notably less than the preferred condition but still exceed minimum criteria for the factor and do not cause resource impairment. An assessment of negligible generally indicates some visitors may perceive an environmental condition associated with implementation of the alternative as a distraction, inconvenience, or unfulfilled desire.

New construction activity is the primary cause of vegetation removal and ground disturbance in the alternative. Minor vegetation removal associated with normal maintenance activities would occur. Use of trails will increase as more visitors come to the park and additional trails are added. While the future physical impact of visitors to vegetation near trails is difficult to quantify, it is logical to assume that impacts will increase in proportion to the rise in people using them. Impacts to sensitive vegetation associated with trail system use would be reduced by tightly controlling access to granite domes and increasing maintenance and enforcement activities in heavily affected or sensitive areas.

Four significant developments are proposed within the boundaries of the park that could cause ground disturbance and the removal of vegetation.

Parking area expansion: It is expected that enlarging the visitor parking area would cause the removal of some tree cover in the vicinity of Front Lake. Grading of the landscape is also expected as the topography of the site is moderately sloping. While actual design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 1.25 to 1.5 acres of mixed pine and hardwood woodland in the visitor services zone.

Approximately 500 to 1000 SF of mixed pine and hardwood forest would be removed to enlarge the volunteer parking area.

The proposed parking sites are adjacent to the existing parking lot behind Front Lake and off the back drive service drive. The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are

short-term impacts that would be gone at the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be additional parking areas and walkways.

Amphitheater relocation: It is expected that relocating the existing amphitheater would cause the removal of tree cover. Grading of the landscape is also expected as the topography is slightly to moderately sloping at each location. While actual site design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 5000 SF of mixed pine and hardwood woodland or pasture in the historic interaction zone. The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts that would be gone at the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff to Front Lake, Side Lake, and Memminger Creek would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be an amphitheater and associated walkways.

Expansion of Administrative and Maintenance Facilities: It is expected that enlarging the headquarters and maintenance area would cause the removal of some tree cover near back road in the general area of the existing facility. Some grading would be expected as the topography of the site is slightly sloping. While actual design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 1 acre of mixed pine and hardwood woodland in the park services zone. The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts that would be gone at the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff to adjacent areas would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers. Regularly sprinkling vehicle

circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be additional structures, paved surfaces, and graveled surfaces.

Expansion of visitor services zone and construction of new interpretive trails: An approximately 3750' long interpretive trail connecting the visitor center parking area to the barn area would be constructed. A 2250' trail segment of the new trail from Little River Road to back gate would require substantial grading and the removal of some grassy vegetation between the historic fence line and the shoulder of the road. A 1500' trail segment running parallel to back drive would require selected tree removal, moderate grading, and the construction of several small wooden footbridges or boardwalks in the forested area between back gate and the barn area. Construction of the new pedestrian trails would occur in the visitor services zones shown in figure 2-g.

The immediate impacts associated with construction of the new interpretive trail segments are: disturbed earth, dust, noise above the ambient, increased traffic delays along Little River Road, and disarray. These are short-term impacts that would be gone at the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff to adjacent areas would be reduced by interception of surface water flowing over exposed earth with filter barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be paved and unpaved trail surfaces, interpretive waysides, benches, small footbridges, and boardwalks.

Cumulative impacts: Construction of new trails and a potential off site visitor center would cause the removal of some trees and grassy vegetation. It is assumed that any removal of vegetation would contribute to the overall trend of vegetation loss in the suburban landscape surrounding the park. Sound design and construction practices could reduce the impact of potential vegetation loss resulting from these potential new developments.

Mitigation of tree loss would be possible if additional non-historic property was acquired for view and boundary protection. Such property, if it came under management of the NPS through donation, easement, or fee simple acquisition, would allow more of the existing suburban landscape to be protected from vegetation removal as part of the overall view protection program of the park.

Criteria: Preservation of existing vegetation is preferred condition. Minimum standard: Any proposed implementation strategy would comply with DO-77 and all other applicable federal policy guidelines. Federal water quality and noise standards would not be violated as a result of associated construction activities.

Park Operations and Administration

Factors in this category describe impacts related to park operations and administration that could occur as a result of implementing the Paths of Discovery alternative.

Factor: Minimizes maintenance and administrative responsibilities.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

The addition of new staff and facilities would increase administration and support services responsibilities. It is anticipated that one additional full time administrative assistant position would be needed to address the additional responsibilities.

Maintenance responsibilities increase due to the addition of additional interpretive trails and off site facilities. It is anticipated that one additional full time maintenance position would need to be added over time to address the increased work load. Volunteer labor could help supplement the maintenance function to a small degree.

Resources management responsibilities increase significantly with the addition of new facilities, new trails, more visitors, and need to coordinate the NEPA and Section 106 compliance procedures associated with those proposed developments. It is anticipated that one additional staff member will be required to fulfill the increased monitoring and compliance responsibilities. Volunteers would play an essential role by helping to measure and document natural and cultural resource conditions on a regular basis.

The creation of additional intellectual access points at on site and off site locations and the aging of the museum collection would increase work load for museum and curatorial staff. It is anticipated that one additional full time position would be needed to address the increased work load. This alternative relies heavily on professional trained volunteer labor to fulfill the preservation responsibilities of the park.

Responsibility of the interpretive staff is increased by the addition of the visitor center and to coordinate an expanded

volunteer and friends group. It is anticipated that one additional position will be needed to address the increased work load and staff new facilities. Volunteers would continue to make a very significant contribution to the interpretive and educational program efforts of the park.

More visitors, facilities, and land would require the addition of one full-time law enforcement ranger to properly enforce park regulations.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Provides additional parking spaces.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

Up to 20 extra parking spaces are provided at new visitor center in addition to those required for operation of the facility. This additional parking capacity will be located within convenient walking distance of the park and be connected to the park entrance via a pedestrian pathway. Up to 20 additional parking spaces are created by restriping and expanding the visitor parking area in the Visitor Services Zone. Up to 10 additional spaces are created in the volunteer parking area off the back drive.

Cumulative impacts: Increased parking availability in this alternative may help reduce traffic congestion near the Park and Playhouse entrances as some traffic volume would presumably be diverted to the off site location. Depending on the location of the new facilities, potential exists for a joint parking arrangement with the Flat Rock Playhouse or Village of Flat Rock that could help resolve both the park and community wide parking shortage.

Factor: Enhances employee, volunteer, and visitor health and safety.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The overall park environment is safe and healthy for employees, volunteers, and visitors. The implementation of this alternative is not expected to result in the development of unsafe or unhealthy conditions over time.

Vehicle and pedestrian interaction in the visitor services zone would be improved by increasing parking capacity in the visitor's parking area and providing additional off site parking.

The addition of a pedestrian trail from the back gate to the barn area separates vehicle and pedestrian traffic along that route.

Pedestrian traffic along Little River Road is increased by the addition of the interpretive trail between the visitor parking area and back gate. Exposure of pedestrians to traffic on Little River Road can be reduced by good design and construction of the trail, improved traffic signage and a reduction of travel speed on Little River Road.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Enhances energy conservation or reduces energy consumption.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Additional off site facility would increase energy consumption. Energy use may be reduced to a certain degree by using energy saving technologies when designing and constructing the off site facility.

The Little River Road interpretive trail enhances community greenway system and encourages more people to leave their vehicles at a remote parking area and access the park by bicycle or foot.

Potential energy conservation may result from improvements to parking and circulation in the visitor services zone that reduce traffic congestion at the park entrance. Improvements in the transportation system may include some form of public transportation service possibly provided through cooperation with local governments, private businesses, or support groups.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Quality of Life and Socioeconomic Environment

Factors in this category describe impacts to the quality of life and socioeconomic environment that could occur as a result of implementing the Paths of Discovery alternative.

Factor: Provides additional opportunities for walking.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment

and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

Construction of the 3/4 mile interpretive connector trail would create a looped trail linking both ends of the existing trail system. Walking opportunities would be closely integrated into the community greenway system. An additional pedestrian access point is created at the back gate. A pedestrian connection is provided between the visitor center, its integrated parking area, and the two park entrances.

Additional trail side amenities would be provided in the visitor service zone.

The NPS would create opportunities for a woodland walking experience on the 110 undeveloped acres between Big Glassy and Little River road should the property be purchased.

Cumulative impacts: Additional walking trails in the visitor services zone, on land acquired in a boundary expansion, and in conjunction with local community efforts to expand the greenway system help provide more walking opportunities for both local residents and park visitors.

Factor: Provides incentives for partnering with local governments, community groups, and individual citizens.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

Park management recognizes that many community goals and park goals are the same, is proactive in forming partnerships to address issues of mutual interest, and works to strengthen its traditionally close relationship with friends support groups, volunteers, and local government officials. The Paths of Discovery alternative relies heavily on successful implementation of partnering opportunities to accomplish common goals.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factors: Potential economic benefit to community.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Visitors who come to the area to take advantage of new walking and interpretive opportunities at the park are potential visitors to other regional tourism locations.

Centrally located visitor center, parking, and pedestrian walkways could encourage visitors to extend their stay in the local area to take advantage of multiple park and private sector tourism and entertainment opportunities. Overnight stays could increase in conjunction with the increase in total visitors and length of stay over time. Additional goods and services would be purchased from local businesses to support increased program, maintenance, and administrative activities at the park.

Construction activity associated with the alternative would provide a temporary boost to the local and regional economy. Approximately six permanent and part time employment opportunities could be created over time.

Potentially removes up to 115 acres from Henderson County property tax roles over time. Impact of lost property tax revenue to Henderson County may be reduced through the Federal Payment in Lieu of Taxes (PILOT) program which would reimburse the county for lost property tax revenue for a period of five years, through sales tax revenues generated by the purchase of additional goods and services from local businesses by visitors, and park purchases of construction and design services for new park infrastructure.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Summary of adverse effects that cannot be avoided

These are impacts that cannot be fully mitigated or avoided. Implementing the Paths of Discovery alternative would cause some tree removal and ground disturbance associated with the addition of visitor service infrastructure in the visitor services zone near Front Lake, between the historic fence line and the shoulder of Little River Road, in the wooded area parallel to Back Drive, and at an undetermined location for a visitor center.

While sound design and construction practices and the protection of undeveloped lands resulting from a boundary expansion would reduce many of these adverse impacts, some contribution to the overall trend of higher development densities in the surrounding community may be expected.

Sound design and construction practices can also reduce the visual impact of the new visitor service infrastructure near Front Lake, however, complete screening of these elements is not possible and some non-historic elements would be visible from the front porch of the main house, particularly in the winter when deciduous trees have lost their foliage.

The construction of a connector trail between the historic fence line and the shoulder of Little River Road would be visible from several important view points in the park, from

the road itself, and from the private residences on the opposite side of Little River Road.

Summary of irreversible or irretrievable commitments of resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long term. Irretrievable commitments are those that are lost for a period of time.

Irreversible commitments: Historic objects can tolerate only a finite amount of exposure to heat, humidity, and light before they must be returned to the museum preservation facility for permanent storage or major conservation treatment. In the Paths of Discovery alternative, exposure of historic artifacts and manuscripts to light, heat, and humidity would continue (particularly in the main house), ultimately resulting in their removal to the museum preservation facility for permanent storage. However, this alternative significantly reduces exposures by providing alternative locations where sensitive resources can be seen in a climate controlled environment thus increasing the over all length of time historic objects would be accessible to the public.

Irretrievable commitments: Construction of a connector trail along Little River Road and Back Drive is considered irreversible in the sense that other potential uses (including historic preservation) of these resources would be lost for a significant period of time.

New construction in the visitor services zone will result in additional walkways, paved parking areas, and other permanent visitor service infrastructure. These impacts are considered irreversible in the sense that other potential use of these resources would be lost for a significant period of time. The loss is, however, somewhat reduced by the fact that the majority of the area that could be developed is a reclaimed road bed that the Sandburgs received in the late 1950's through a land trade when the road alignment of Little River Road was changed.

Relocating the amphitheater will result in vegetation removal, additional walkways, seating and stage construction, and other permanent visitor service infrastructure. These impacts are considered irreversible in the sense that other potential uses of these resources would be lost for a significant period of time. The loss is potentially reduced by restoring the old amphitheater site to its period of significance condition.

Summary of the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity

For the purposes of this discussion, short term is defined as the time span for which this General Management Plan is

expected be effective (generally assumed to be 15-20 years) and long term is defined as a period beyond that time.

In the Paths of Discovery alternative, the short term benefits of providing improved visitor services, an expanded trail system, improved program capability, and greater public access to information in the museum collection are facilitated by the development of a small but very visible portion of the historic landscape.

Assessment of Potential Environmental Impacts Associated With the Connemara Lifestyle Alternative.

Cultural Resource Management

Factors in this category describe impacts to cultural resources that could that could result from implementing the Connemara Lifestyle alternative.

Factor: Preservation of Historic Building Interiors

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

As many historic structures as possible would be restored and furnished to represent the period of significance. No additional historic structures would be rehabilitated for park use. The farm mangers house, garage, and main house basement would continue to be used for administrative, educational, or interpretive functions.

Cumulative Impact: No significant negative cumulative impacts are associated with this factor.

Factor: Introduction of non-period elements to the historic landscape

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Non-historic elements would be evident in an expanded visitor services zone but visitors would experience a landscape that closely represents the historic scene as it existed during the Sandburg residency.

Non-historic elements introduced into the historic interaction zone would be minimized. Visitors would be able to experience a historic landscape as true to the period of significance as practical. Visible interpretive media, trail side benches, trash cans and other nonessential visitor services

infrastructure would be removed from the historic discovery zone.

The following non-historic elements are proposed or present in the historic landscape for this alternative:

- The historic landscape of the park would be maintained as close to the period of significance as practical. Site specific historic landscape management and implementation procedures within specific zones would be recommended and documented in a cultural landscape report or development concept plan.
- The existing trailer comfort station near the main house would be replaced by a sensitively designed new facility of approximately the same size at the same location. Design alternatives for the new facility would be developed and coordinated with the State Historic Preservation Officer as required by NPS policy.
- The parking and public entrance area on Little River Road would be redesigned and enlarged to accommodate additional vehicles. Design alternatives for these improvements would be proposed in a development concept plan and coordinated with the State Historic Preservation Officer and the public as required by NPS policy.
- Visitor service infrastructure would be enhanced in the visitor services zone by modifying the visitor information and comfort station to provide additional interpretive and information capabilities. The non-historic walking trails in the visitor services zone would remain and additional trails could be added. A small area for picnic tables could be included in the design if desired. Design of proposed improvements would be detailed in a development concept plan and coordinated with the State Historic Preservation Officer and the public as required by NPS policy.
- A shuttle vehicle would continue to transport visitors who need assistance up the steep slope from the parking area to the main house area. The visual impacts of the transport vehicle would be reduced by replacing it with a less visually and audibly intrusive vehicle.
- The existing amphitheater would be replaced by a new facility constructed at one of the three approved sites identified in the alternative.
- The maintenance facility, museum preservation facility, and headquarters building could be enlarged as needed within the park services zone.
- Volunteers parking area would not be enlarged but could be redesigned to improve traffic flow and accessibility.

Cumulative impacts: Suburban growth pressures would result in new developments, some of which would be visible to the historic landscape within the park.

Factor: Opportunities for solitude or a contemplative experience.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

Opportunities for visitors to experience solitude or have a contemplative experience continue to be common along the wooded trails, at Big Glassy overlook, and in the pasture areas year around except during the highest of peak visitation days. Such experiences occur in the main house and barn areas of the park during periods of low visitation.

During periods of moderate to high visitation, lack of trail amenities may discourage some casual use of the Big Glassy Trail and provide more opportunities for solitude along the trail and at the summit than the other alternatives.

Cumulative impacts: As the character of the surrounding community becomes more suburban, fewer opportunities for solitude and contemplative experiences would exist outside park boundaries. The local greenway may reduce this impact to a certain degree if it is funded and constructed to completion.

Interpretation and Museum Operations

Factors in this category describe impacts related to interpretation, education, and museum operations that could result from implementing the Connemara Lifestyle Alternative.

Factor: Provides high quality facilities capable of supporting a variety of interpretation/education/museum programs.

Assessment: Negligible – results of implementing the alternative are notably less than the preferred condition but still exceed minimum criteria for the factor and do not cause resource impairment. An assessment of negligible generally indicates some visitors may perceive an environmental condition associated with implementation of the alternative as a distraction, inconvenience, or unfulfilled desire.

Interpretation: The new amphitheater, main house, and barn area continue to serve as venues for tour and performance-type interpretive experiences. Opportunities for growth of dynamic and interactive interpretive programs is limited by size and location conflicts at both the amphitheater and barn areas. The house garage remains the only facility capable of accommodating an indoor lecture-type interpretive program. Because indoor program space is limited, scheduling conflicts

occur during periods of inclement weather. Informal learning experiences continue to occur at the horse barn and amphitheater, weather permitting. Outdoor educational experiences are available. Opportunities for additional dynamic and interactive education programs is limited in this alternative.

Museum: Original historic objects associated with the Sandburgs can be viewed at the main house (household and professional objects), woodshed (farm equipment), barn garage (farm vehicles), and shaving shed (farm equipment) and other structures as they are restored. Historic objects continue to degrade because of damaging changes in humidity, temperature, and light at all of these locations. New restorations would be furnished with reproduction or period objects in instances where climate control was not practical.

Museum preservation facility provides climate controlled storage or conservation treatment for objects but is not large enough or otherwise suitable for public viewing and interpretation of historic objects. Many historic objects remain inaccessible to the general public while they are in the museum preservation facility because no suitable protected environment exists where they can be used as a resource for research or interpretation purposes.

Cumulative impacts:

Interpretation: No significant negative cumulative impacts on interpretation are associated with this factor.

Education: No significant negative cumulative impacts on education are associated with this factor.

Museum: Historic objects can tolerate only a finite amount of exposure to heat, humidity, and light before they must be brought back to the museum preservation facility for permanent storage or major conservation treatment. As historic objects in this alternative would continue to be exhibited in an uncontrolled climatic environment, degradation would accumulate more quickly than if they were exhibited in a controlled climatic environment. Objects that have reached their maximum exposure levels would need to be removed from exhibit status if park managers wish to avoid permanent resource damage.

Factor: Provides visitors with opportunities for personal contact with NPS personnel (staff or trained volunteers).

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

The park continues to provide high quality on-site personal interpretation to visitors on a regular basis at the main house

and barn area locations. School-based education programs are provided for students in local schools.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Provides opportunities for public access to museum collection and related information.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

The potential number of public intellectual access points is increased by creating a high quality and user friendly resource database. Database information could be accessed and used by visitors both on and off site using the internet or other high tech media formats.

Expansion of visitor information facility provides a small climate controlled area where visitors can view historic objects. Visitors may view historic objects at the main house, barn garage, woodshed, milk house, and shaving shed. Many of Carl Sandburg's personal possessions are exhibited at the main house and available for public access only by participating in the guided tour.

A significant number of historic objects and almost all of the historic archives are stored in the museum preservation facility and can be accessed only by appointment with the curatorial staff.

Cumulative impacts: Accumulated exposures to humidity, light, and heat would necessitate the removal of some objects and manuscripts to the museum preservation facility for permanent storage. As more objects are moved over time, public access to information in the museum collection would be reduced. Presumably, this impact could be partially reduced by replacing removed historic objects with reproduction or period objects.

No significant negative cumulative impacts to resources outside park boundaries have been identified for this factor.

Factor: Promotes continued learning and research of Carl Sandburg.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Opportunity to expand continued learning and research activities to a larger audience is limited by lack of adequate support facilities. Outside research is supported to the extent possible by the existing curatorial and interpretation staff. Accommodating large groups or individuals for extended periods of time is not possible. On-line data base allows some remote research to occur.

Cumulative impacts: Many people who are interested in Carl Sandburg and his works today lived during the time when he was actively writing and lecturing. As this population ages, fewer people would be available to introduce a younger and more diverse audience to the author's works. Even though many of Carl Sandburg's works are as relevant to contemporary American society today as they were when first published, fewer and fewer people would be exposed to his writings. This alternative assumes that interest in continued learning and research would decline in cumulative fashion over time. The manifestations of this trend are already being felt as the number of Sandburg works going out of print increases each year.

No significant negative cumulative impacts to resources outside park boundaries have been identified for this factor.

Factor: Provides opportunity to link park themes with local, state, national, and international education programs.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park education programs continue to be conducted primarily on site. Park themes are successfully integrated into local education programs directly by park staff with some assistance by area educators. Teacher workshops are conducted on-site and focus on park resources. Curriculum materials are developed by park staff with assistance from local educators. The full potential for state, national, and international education programs is not fully realized.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Natural Resource Management

This factor describes the potential changes to vegetation that could result from implementing the Connemara Lifestyle alternative.

Factor: Potential to preserve existing vegetation

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral

assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Use of trails will increase as more visitors come to the park. While the future physical impact of visitors to vegetation near trails is difficult to quantify, it is logical to assume that impacts will increase in proportion to the rise in people using the trails. Impacts to sensitive vegetation associated with trail system use would be reduced by tightly controlling access to granite domes and increasing maintenance and enforcement activities in heavily affected or sensitive areas.

The construction of new visitor service infrastructure would result in removal of vegetative cover and cause associated ground disturbance. Three developments are proposed within the present boundaries of the park in this alternative.

Parking area expansion: It is expected that enlarging the visitor parking area and expanding the visitor information station would cause the removal of some tree cover in the vicinity of Front Lake and behind the existing visitor information station. Grading of the landscape is also expected as the topography of the site is moderately sloping. While actual design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 1.25 to 1.5 acres of mixed pine and hardwood woodland in the visitor services zone.

The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts that would be gone at the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff to Front Lake and Memminger Creek would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be additional parking areas and walkways.

Amphitheater relocation: It is expected that relocating the existing amphitheater to one of the three recommended areas would cause the removal of tree cover. Grading of the landscape is expected as the topography is slightly to moderately sloping at each location. While site design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact approximately 5000 SF of mixed pine and hardwood woodland or pasture in the historic interaction zone. The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts that would be gone at

the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff to Front Lake, Side Lake, and Memminger Creek would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be an amphitheater and associated walkways.

Expansion of Administrative and Maintenance Facilities: It is expected that enlarging the headquarters and maintenance area could cause the removal of some tree cover in the general area of the existing facility. Some grading would be expected as the topography of the site is slightly sloping. While actual design alternatives and construction specifications are beyond the scope of this document, it is estimated that construction activity could impact about 1 acre of mixed pine and hardwood woodland in the park services zone.

The immediate impacts associated with construction are: disturbed earth, dust, noise above the ambient, and disarray. These are short-term impacts that would be gone at the conclusion of the construction phase and may be reduced through construction site Best Management Practices. Soil runoff to adjacent areas would be reduced by interception of surface water flowing over exposed earth with filter fabric barriers or other appropriate techniques. Regularly sprinkling vehicle circulation routes with water would reduce dust. Regular pick up and disposal of litter and construction debris would reduce the litter problems. Noise and disarray are short term impacts and would disappear at the conclusion of the activity. Remaining for the long term would be additional structures, paved surfaces, and graveled surfaces.

Cumulative impacts: Vegetation removal associated with expanding visitor parking would contribute to the overall trend of vegetation loss in the suburban landscape surrounding the park. Sound design and construction practices could reduce the impact of potential vegetation loss resulting from these potential new developments.

Significant mitigation would be possible if legislation increasing the authorized boundary of the park was approved. Additional non-historic property acquired for view and boundary protection would allow more of the existing suburban landscape to be protected from tree removal.

Park Operations and Administration

Factors in this category describe impacts to park operations and administration that could result from implementing the Connemara Lifestyle alternative.

Factor: Minimizes maintenance and administrative responsibilities.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Administration and support services personnel continue to provide adequate supervisory management and/or administrative support for park personnel and activities without increasing staff levels.

Maintenance staff continues to perform all of the maintenance responsibilities associated with the park. Current staffing levels are unchanged. Volunteer labor supplements the maintenance function to a small degree.

Resources management staff continues to fulfill its responsibilities for NEPA and Section 106 compliance, safety management, law enforcement, natural and cultural resource inventory and monitoring without additional staff. More visitors cause work load to increase gradually over time but staff is able to cope by limiting its operation to the most essential functions and improving efficiency through new technology.

The creation of additional intellectual access points and the aging of the museum collection would increase work load for museum and curatorial staff. It is anticipated that one additional full time position would be needed to address the increased work load. This alternative relies heavily on volunteer labor to fulfill the preservation responsibilities of the park.

The park interpretive staff continues to provide high quality visitor interpretation and education services to people on site and in the local community. It is anticipated that one additional full time position would be needed to address the increased work load. Volunteers continue to make a critical contribution to the interpretive and educational program efforts of the park.

More visitors and land would require the addition of a full-time law enforcement ranger to properly enforce park regulations.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Provides additional parking spaces.

Assessment: Exceptional – results of implementing the alternative clearly meet and exceed the high criteria. An assessment of exceptional is the most desirable assessment and indicates that implementing the alternative would most

likely result in a highly desirable, unique, or beneficial environmental condition readily noticed by visitors.

Up to 30 additional parking spaces are provided at new parking area located within convenient walking distance of the park and are connected to the park entrance via a pedestrian pathway. Up to 20 additional parking spaces are created by restriping and expanding the visitor parking area in the Visitor Services Zone. Up to 10 additional spaces are created in the volunteer parking area off the back drive.

Cumulative impacts: Increased parking availability in this alternative may help reduce traffic congestion near the Park and Playhouse entrances but does not contribute significantly to the community wide parking shortage.

Factor: Enhances employee, volunteer, and visitor health and safety.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

The overall park environment is safe and healthy for employees, volunteers, and visitors. The implementation of this alternative is not expected to result in the development of unsafe or unhealthy conditions over time.

Vehicle and pedestrian interaction in the visitor services zone would be enhanced by improved circulation patterns associated with the parking area expansion. Additional parking may keep some visitors from parking on the shoulder of Little River Road, but it is unlikely to be able to accommodate parking volume during periods of high visitation.

A regular two way flow of pedestrians and vehicles moves simultaneously between the headquarters and maintenance buildings and the volunteer parking area most of the day. Low vehicle speeds, safety training, and observant employees reduce the potential for accidents.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factor: Enhances energy conservation or reduces energy consumption.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental

condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Additional on site facilities would cause energy consumption to increase. Energy use may be reduced to a certain degree by using energy saving design and construction technologies.

Potential energy conservation may result from improvements to parking and circulation in the visitor services zone that reduce traffic congestion at the park entrance.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Quality of Life and Socioeconomic Environment

Factors in this category describe impacts to the quality of life and socioeconomic environment that could occur as a result of implementing the Connemara Lifestyle alternative.

Factor: Provides additional opportunities for walking.

Assessment: Minor – results of implementing the alternative do not satisfy conditions described in the high criteria for the factor but clearly exceed minimum criteria and fall well short of resource impairment. An assessment of minor is a neutral assessment acknowledging a less than optimum environmental condition that can be successfully managed to minimize its impact on visitor experience or resource protection goals.

Opportunities to walk for exercise are available. Construction of additional walking trails is possible in the visitor services zone but is not a management priority for the future. Trail side amenities remain at existing levels and connection to the greenway system occurs at the park entrance.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor. Local greenway system helps reduce some of the impact of not expanding walking opportunities for local residents in the park.

Factors: Provides incentives for partnering with local governments, community groups, and individual citizens.

Assessment: Moderate – an assessment of moderate is a positive assessment indicating that implementing the alternative would result in conditions which generally satisfy the high criteria for the factor, but do so in a way that would not be noticed by most visitors.

Park management remains engaged, dedicated, and a willing member of the local community. It cooperates constructively on issues of mutual interest and concern and works to strengthen its traditionally close relationship with friends support groups, volunteers, and local government officials. Park management recognizes the high potential for beneficial partnering relationships but does not rely solely on those relationships to accomplish management objectives.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Factors: Potential economic benefit to community.

Assessment: Negligible – results of implementing the alternative are notably less than the preferred condition but still exceed minimum criteria for the factor and do not cause resource impairment. An assessment of negligible generally indicates some visitors may perceive an environmental condition associated with implementation of the alternative as a distraction, inconvenience, or unfulfilled desire.

The park contributes to the local economy by attracting tourists, providing permanent and part time employment opportunities, and by purchasing goods and services from local suppliers. As the number of visitors to the site increases over time, economic benefits attributed to that increase would be apparent. It is assumed that length of stay per visitor would remain relatively unchanged. Overnight stays could increase slightly in conjunction with the increase in total visitors over time.

Potentially removes up to 25 acres from Henderson County property tax roles over time. Impact of lost property tax revenue to Henderson County may be reduced through the Federal Payment in Lieu of Taxes (PILOT) program which would reimburse the county for lost property tax revenue for a period of five years, through sales tax revenues generated by the purchase of additional goods and services from local businesses by visitors, and park purchases of construction and design services for new park infrastructure.

Cumulative impacts: No significant negative cumulative impacts are associated with this factor.

Summary of adverse effects that cannot be avoided

These are impacts that cannot be fully mitigated or avoided. Exposure of historic artifacts and manuscripts to light, heat, and humidity would continue, ultimately resulting in their removal to the museum preservation facility for permanent storage. Such impacts would be more significant in this alternative than the Sandburg Center alternative and Paths of Discovery alternative because fewer climate controlled environments are proposed to provide public access and less significant than the No Action alternative because some additional climate controlled space is proposed as part of the visitor information station renovation.

Summary of irreversible or irretrievable commitments of resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long term. Irretrievable commitments are those that are lost for a period of time.

Historic objects can tolerate only a finite amount of exposure to heat, humidity, and light before they must be returned to the museum preservation facility for permanent storage or major conservation treatment. In the Connemara Lifestyle alternative, exposure of historic artifacts and manuscripts to light, heat, and humidity would continue (particularly in the main house), ultimately resulting in their removal to the museum preservation facility for permanent storage. However, this alternative somewhat reduces exposures by providing a small alternative location in the renovated visitor information station where sensitive resources can be seen in a climate controlled environment.

Irretrievable commitments: New construction in the visitor services zone will result in additional walkways, paved parking areas, and other permanent visitor service infrastructure. These impacts are considered irreversible in the sense that other potential use of these resources would be lost for a significant period of time. The loss is, however, somewhat reduced by the fact that the majority of the area that could be developed is a reclaimed road bed that the Sandburgs received in the late 1950's through a land trade when the road alignment of Little River Road was changed.

Relocating the amphitheater will result in vegetation removal, additional walkways, seating and stage construction, and other permanent visitor service infrastructure. These impacts are considered irreversible in the sense that other potential uses of these resources (including historic preservation) would be lost for a significant period of time. The loss is potentially reduced by restoring the old amphitheater site to its period of significance condition.

Summary of the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity

For the purposes of this discussion, short term is defined as the time span for which this General Management Plan is expected to be effective (generally assumed to be 15-20 years) and long term is defined as a period beyond that time.

In the Connemara Lifestyle alternative, short term opportunities to reach a broader audience, create new interpretive venues, and promote access to the museum collection are limited in order to reduce additional resource management responsibility and long term financial commitment.

